



UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of:

Wegeng et al.

Application No. 10/609,501

Filed: June 30, 2003

For: METHOD AND APPARATUS  
FOR THERMAL SWING  
ADSORPTION AND  
THERMALLY-ENHANCED  
PRESSURE SWING  
ADSORPTION

Art Unit: 1724

Examiner: F. Lawrence

Atty Docket: 13025E-DIV

**INFORMATION DISCLOSURE STATEMENT**

Assistant Commissioner for Patents  
Washington, D.C. 20231

Sir:

Pursuant to the duty of disclosure under 37 CFR §§ 1.56 and 1.97-1.99, the documents listed on the attached Form(s) PTO-1449 are being brought to the attention of the Examiner in charge of the above-identified application. The fee set forth in 37 CFR § 1.17(p) is provided for in the accompanying Fee Transmittal Form.

The Examiner is respectfully requested to initial the space adjacent each document entry on the Form(s) PTO-1449, and to return a copy of the initialled Form(s) PTO-1449 to confirm that the documents have been considered and have been officially made of record in this application.

Applicants thank Examiner Lawrence for the remark on page 2 of the Office Action that references submitted in the parent application need not be attached to this Information Disclosure Statement.

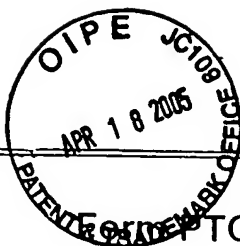
If the Examiner has any questions or wishes to discuss this application, the Examiner is invited to telephone the undersigned representative at the number set forth below.

Respectfully submitted,

Date: 15 April 2005

By: Frank S. Rosenberg

Frank S. Rosenberg  
Registration No. 37,068  
Tel. No. 925-376-8416



# Information Disclosure Citation

Examiner's TO-1449

Attorney Docket  
13025E - DIV

Application No.

Applicant  
Wegeng et al.

Filing Date

Group Art Unit

## U.S. Patent Documents

Examiner Initial		Patent Number	Date	Name	Class	Sub-Class	Filing Date
	AA	6,508,862	2003	Tonkovich et al.	95	106	4/30/01
	AB	5,811,062	1998	Wegeng et al.	422	129	
	AC	6,488,838	2002	Tonkovich et al.	208	108	4/17/1999
	AD	5,948,142	1999	Holmes et al.	95	99	
	AE	5,802,870	1998	Arnold et al.	62	480	
	AF						
	AG						

## Foreign Patent Documents

		Document Number	Date	Country	Class	Sub-Class	Translation
	AH	DE 3509564A1	1986	Germany	F24	J3/00	No
	AI	JP 2001085040	3/30/2001	Japan	H01M	8/06	Abstract
	AJ	JP 02170369 0	1988	Japan	H01M	8/06	Abstract
	AK	JP 61107668 0	1984	Japan	H01M	8/04	Abstract
	AL	JP 2001035518	2/9/2001	Japan	H01M	8/04	Abstract
	AM	JP 2000351604	12/19/2000	Japan	H01M	8/06	Abstract
	AN						
	AO						
	AP						

## Other Documents (Including Author, Title, Date, Pertinent Pages, etc.)

	AQ	PCT Search Report, mailed Jan 8, 2003, PCT/US 02/13722
	AR	
	AS	
	AT	

Examiner

Date Considered

EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP § 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to Applicant.

Form PTO-1449

U.S. DEPARTMENT OF COMMERCE  
PATENT AND TRADEMARK OFFICEDOCKET NO.:  
13025-E-DIV

SERIAL NO.:

LIST OF ART CITED BY APPLICANT  
(Use several sheets if necessary)APPLICANT:  
RE Wegeng et al.

FILING DATE:

GROUP:

## U.S. PATENT DOCUMENTS

*Examiner Initial		Document Number	Date	Name	Class	Subclass	Filing Date If Appropriate
	A	5,674,301	10/07/1997	Sakai et al.	48	61	

## FOREIGN PATENT DOCUMENTS

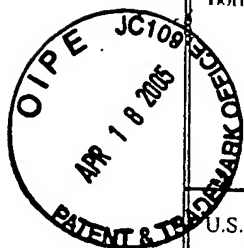
		Document Number	Date	Country	Class	Subclass	Translation	
							Yes	No

## OTHER REFERENCES (including Author, Title, Date, Pertinent Pages, Etc.)


EXAMINER

DATE CONSIDERED

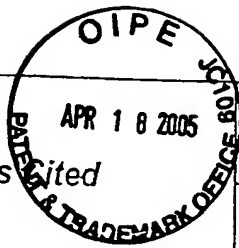
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Form PTO-1449		U.S. DEPARTMENT OF COMMERCE PATENT AND TRADEMARK OFFICE		DOCKET NO.: 13025-E - DIV		SERIAL NO.:		
LIST OF ART CITED BY APPLICANT (Use several sheets if necessary)				APPLICANT: RS Wegang et al.				
				FILING DATE:		GROUP:		
U.S. PATENT DOCUMENTS								
*Examiner Initial		Document Number	Date	Name	Class	Subclass	Filing Date If Appropriate	
	A	4,055,962	11/01/1977	Terry	62	102		
	B	4,281,969	08/04/1981	Doub, Jr.	417	52		
	C	4,779,428	10/25/1988	Chan et al.	62	467		
	D	5,046,319	10/10/1991	Jones	62	46.2		
	E	5,419,156	05/30/1995	Sywulka	62	476		
FOREIGN PATENT DOCUMENTS								
		Document Number	Date	Country	Class	Subclass	Translation	
							Yes	No
	F	WO 00/45940	08/10/2000	PCT	<del>53</del>	<del>22</del>	X	
	G	0 976 679	02/02/2000	EP	<del>3</del>	<del>53</del>	X	
OTHER REFERENCES (including Author, Title, Date, Pertinent Pages, Etc.)								
	H	H Barthels et al., "Phoebus-Julich: An Autonomous Energy Supply System Comprising Photovoltaics, Electrolytic Hydrogen, Fuel Cell", pg. 295-301. 1997.						
	I	X Feng et al., "Hollow-Fiber-Based Adsorbers for Gas Separation by Pressure-Swing Adsorption". pg. 1555-1562. 1998.						
	J	JA Jones et al., "Design, Life Testing, and Future Designs of Cryogenic Hydride Refrigeration Systems", pg. 1-23. No date						
	K	K Karperos, "Operating Characteristics of a Hydrogen Sorption Refrigerator Part I: Experiment Design and Results". pg. 1-15.						
	L	AY Tonkovich et al., "Apparatus and Methods for Hydrogen Separation/Purification Utilizing Rapidly Cycled Thermal Swing Sorption", pg. 1-51. 2001						
	M	AY Tonkovich et al., "Apparatus and Methods for Separation/Purification Utilizing Rapidly Cycled Thermal Swing Sorption", pg. 1-69. 2001						
	N	JJ Reilly et al., "A New Laboratory Gas Circulation Pump for Intermediate Pressures" pg. 1485-1486. 1971.						
	O	WJ Thomas et al., "Adsorption Technology and Design", pg. 108-119, 220-227. 1998.						
	P	VV Viswanathan et al., "Microscale Adsorption for Energy and Chemical Systems", pg. 1-3. 2001.						
EXAMINER				DATE CONSIDERED				
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## Notice of References Cited

Application/Control No.

Applicant(s)/Patent Under  
Reexamination  
WEGENG ET AL.

Examiner

Art Unit

Page 1 of 1

## U.S. PATENT DOCUMENTS

	Document Number Country Code-Number-Kind Code	Date MM-YYYY	Name	Classification
A	US-3,568,406	03-1971	Dynes	95/115
B	US-4,056,369	11-1977	Quackenbush, Henry	208/262.1
C	US-4,444,727	04-1984	Yanagihara et al.	422/223
D	US-4,612,022	09-1986	Berry, W. Wes	95/113
E	US-4,793,143	12-1988	Rhodes, Barry V.	62/93
F	US-5,298,054	03-1994	Malik, Ram L.	95/104
G	US-5,650,221	07-1997	Belding et al.	162/157.2
H	US-5,681,370	10-1997	McMahon, James P.	95/105
I	US-6,066,192	05-2000	Toshinaga et al.	95/101
J	US-6,251,164	06-2001	Notaro et al.	95/106
K	US-6,293,998	09-2001	Dolan et al.	95/106
L	US-			
M	US-			

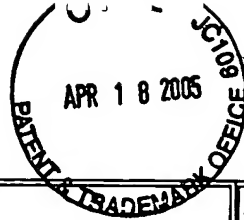
## FOREIGN PATENT DOCUMENTS

*	Document Number Country Code-Number-Kind Code	Date MM-YYYY	Country	Name	Classification
	N				
	O				
	P				
	Q				
	R				
	S				
	T				

## NON-PATENT DOCUMENTS

*		Include as applicable: Author, Title Date, Publisher, Edition or Volume, Pertinent Pages)
	U	
	V	
	W	
	X	

\*A copy of this reference is not being furnished with this Office action. (See MPEP § 707.05(a).)  
 Dates in MM-YYYY format are publication dates. Classifications may be US or foreign.

**Form PTO-1449**  
**Information Disclosure Citation**Attorney Docket  
13025E-DIVApplication No.  
10/609,501Applicant  
Wegeng et al.Filing Date  
Jun 30, 2003Group Art Unit  
1724**U.S. Patent Documents**

Examiner Initial		Patent Number	Date	Name	Class	Sub-Class	Filing Date
	AA	5,611,214	1997	Wegeng et al.	62	498	
	AB	6,814,781	2004	Tonkovich et al.	95	90	
	AC	6,630,012	2003	Wegeng et al.	95	106	
	AD	6,143,943	2000	Oroskar et al.	585	654	
	AE	6,126,723	2000	Drost et al.	95	4	
	AF	6,746,515	2004	Wegeng et al.	95	96	
	AG						

**Foreign Patent Documents**

		Document Number	Date	Country	Class	Sub-Class	Translation
	AH	WO 01/012323A2	2001	PCT	B01J	35/00	
	AI						
	AJ						
	AK						
	AL						
	AM						
	AN						
	AO						
	AP						

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